Bar Plot of Scores by Group and Gender

Aim

To create a bar plot of scores by group and gender using multiple X values on the same chart for men and women.

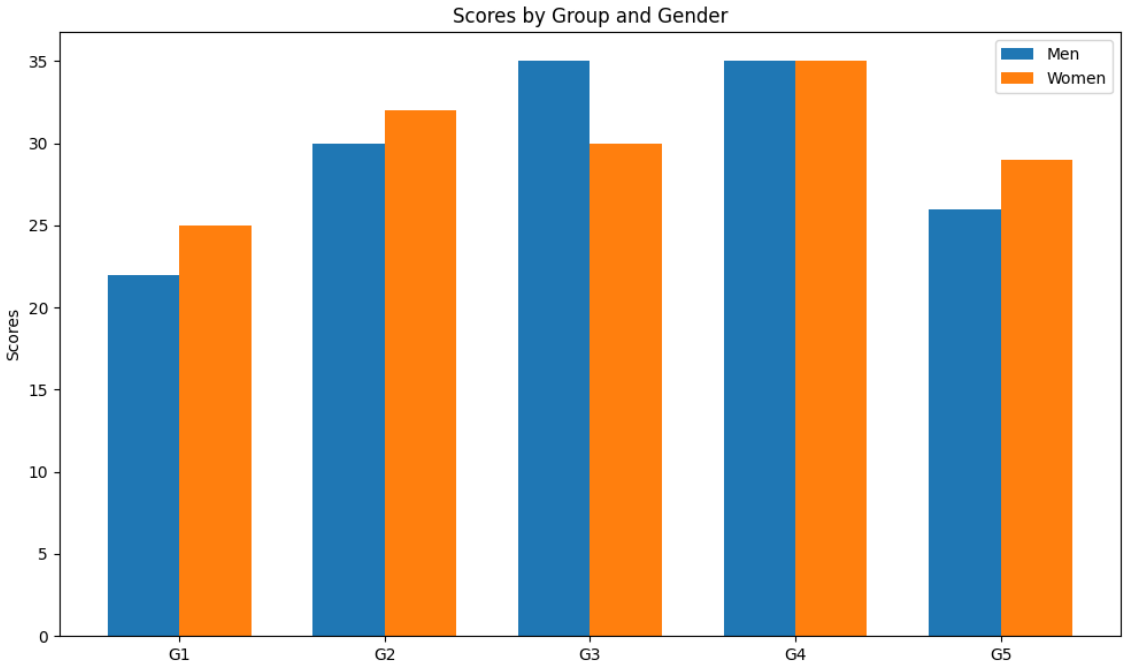
Algorithm

1. Import required libraries (matplotlib.pyplot and numpy)
2. Define the data for men's and women's means
3. Set up the X-axis positions for the bars
4. Create a figure and axis object
5. Plot the bars for men and women
6. Customize the plot (labels, title, legend)
7. Display the plot

Code

```
import matplotlib.pyplot as plt
import numpy as np

means_men = (22, 30, 35, 35, 26)
means_women = (25, 32, 30, 35, 29)

x = np.arange(len(means_men))
width = 0.35

fig, ax = plt.subplots(figsize=(10, 6))

rects1 = ax.bar(x - width/2, means_men, width, label='Men')
rects2 = ax.bar(x + width/2, means_women, width, label='Women')

ax.set_ylabel('Scores')
ax.set_title('Scores by Group and Gender')
ax.set_xticks(x)
ax.set_xticklabels(['G1', 'G2', 'G3', 'G4', 'G5'])
ax.legend()

plt.tight_layout()
plt.show()
```

Output



Result

The bar plot successfully displays the scores for men and women across five different groups (G1 to G5). The bars for men and women are placed side by side for easy comparison. The legend differentiates between men's and women's scores, and the Y-axis shows the score values. This visualization allows for quick and easy comparison of scores between genders and across different groups.